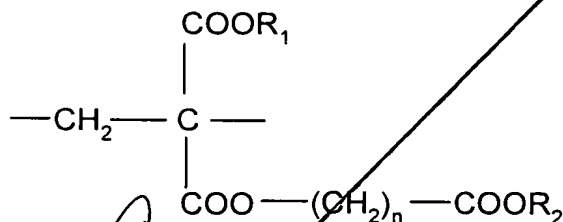


*What is claimed is:* ~~CLAIMS~~

1. Biocompatible copolymers of the type comprising at least one sequence having a hydrophilic character and at least one sequence having a hydrophobic character, characterised in that said sequence having hydrophobic character is formed :

- either from a homopolymer constituted of recurring units of the following general formula :



in which :

- $R_1$  represents an alkyl group having 1 to 6 carbon atoms or a  $(\text{CH}_2)_m\text{-COOR}_3$  group in which  $m$  is an integer between 1 and 5 and  $R_3$  represents an alkyl group having 1 to 6 carbon atoms ;
- $R_2$  represents an alkyl group having 1 to 6 carbon atoms ; and
- $n$  is an integer between 1 and 5 ;
- or from a random copolymer constituted of different recurring units of formula (I) as defined above ;
- or, finally, from a random copolymer constituted mainly of units of formula (I) as defined above.

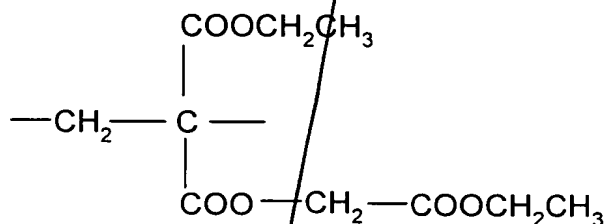
2. The copolymers according to claim 1, characterised in that the above-mentioned sequence having hydrophobic character is constituted of recurring units of the above-mentioned general formula (I) in which :

$R_1$  represents an alkyl group having 1 to 6 carbon atoms ;

$R_2$  represents an alkyl group having 1 to 6 carbon atoms ; and

n is a number equal to 1.

3. The copolymers according to claim 1, characterised in that the above-mentioned sequence having hydrophobic character is constituted of recurring units of formula :



4. The copolymers according to one of claims 1 to 3, characterised in that the above-mentioned sequence having hydrophilic character is selected from a poly(oxyethylene), a poly(vinyl alcohol), a poly(vinylpyrrolidone), a poly(N-2 hydroxypropyl methacrylamide), a poly(hydroxyethyl methacrylate), a hydrophilic poly(amino acid) such as a polylysine, and a polysaccharide.

5. The copolymers according to one of claims 1 to 4, characterised in that they have a block structure, preferably a di-block or tri-block structure, or a grafted structure.

6. The copolymers according to one of claims 1 to 5, characterised in that they have a content by weight of sequence having hydrophobic character of between 5 and 95 %, preferably of between 10 and 90 %.

7. The copolymers according to one of claims 1 to 6, characterised in that the total molar mass of the sequences having hydrophobic character is

between 1,000 and 80,000 g/mol, and preferably between 1,000 and 50,000 g/mol.

8. Use of the copolymers according to any one of claims 1 to 7 for  
5 preparing micellar systems, emulsions, for preparing or stabilising nanoparticles, or for encapsulating active substances.

9. Use of the copolymers according to any one of claims 1 to 7 as  
agents for treating the surface of materials or biomaterials, particularly for  
10 conferring a hydrophilic character to the treated surfaces by anchoring of said copolymers.

10. Use of the copolymers according to any one of claims 1 to 7 as  
agents for treating the surface of materials or biomaterials which may come  
15 into contact with animal tissues, cells or biomolecules, particularly for minimising the interfacial adhesion with said animal tissues, cells or biomolecules.



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